

Calendar

Thursday, April 20

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4:00 p.m. Accelerator Physics and

Technology Seminar - Curia II

Speaker: V. Ranjbar, Fermilab

Title: Chromaticity and Impedance Effect on the Transverse Motion of Longitudinal Bunch Slices in the Tevatron

Friday, April 21

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4:00 p.m. Joint Experimental Theoretical Physics Seminar - 1 West

Speaker: G. Kane, University of Michigan

Title: LHC4TeV: Tevatron Collider

Physics in the LHC Era

For links to events, click [here](#).

Weather



Partly Cloudy **71°/45°**

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

[Secon Level 3](#)

Wilson Hall Cafe

Volunteer clean-up today



The volunteer clean-up is open to everyone at Fermilab. This year's clean-up dates are April 20, May 18, June 15, July 20, and August 17. (Click on image for larger version.)

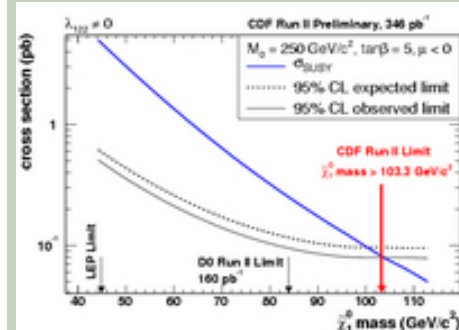
The first [volunteer clean-up](#) of the year is today at lunch time. At 11:45 a.m., buses will shuttle interested employees from the east ground floor of Wilson Hall to areas around site that are ripe for trash-picking. Clean-up gear is provided, and hot dogs and refreshments will be served.

Employee Concerns Program fosters open communication

Energy Secretary Samuel Bodman recently issued a [memorandum](#) encouraging DOE and Federal contractor personnel to report concerns about safety, quality, environment, health, security, or management of DOE operations without "fear of reprisal." Though the memo encouraged direct communication with management whenever possible, it also mentioned the Employee Concerns Program, which allows employees to report issues anonymously in cases where discussions with management may be uncomfortable. For further information regarding the DOE Employee Concerns Program, please contact the DOE Office of Civil

Fermilab Result of the Week

Search for "brand Y" Supersymmetry



The excluded mass range of the lightest supersymmetric particle for the case in which at least 2 of the 4 leptons are muons. This is one of the results from the CDF R-parity Violating Supersymmetry analysis. (Click on images for larger version)

Supersymmetry, or SUSY, is a hypothetical theory that predicts a family of new particles differing in their spin by 1/2 unit from "ordinary" matter particles. SUSY fixes a problem with calculations in the Standard Model in which the Higgs boson mass can grow unacceptably large, and is a part of theories that unify gravity with the other forces. Unless and until Supersymmetry is discovered, there will be many different SUSY theories. Most models include a new conserved quantum number called R-parity that has the additional feature of predicting a plausible candidate for the cold dark matter of the universe, a neutral particle that is the lightest of the supersymmetric particles. "Brand X" SUSY strictly enforces R-parity conservation. Recently, the CDF collaboration completed a search for "brand Y" SUSY model that allows a limited amount of R-parity non-conservation. If this type of "R-parity violating," or RPV SUSY, exists in nature, there may be truly spectacular events at

Thursday, April 20

-Southwestern Chicken Tortilla
 -Philly Style Cheese Steak
 -Chicken Pot Pie
 -Tomato Basil Chicken Parmesan
 -Southwestern Turkey Wrap
 -4 Cheese Pizza
 -Marinated Grilled Chicken Caesar
 Salads

[Wilson Hall Cafe Menu](#)

Chez Leon**Thursday, April 20****Dinner**

-Coquille St.Jacques
 -Pork Tenderloin with Marsala Sauce
 -Steamed Asparagus
 -Roasted Yukon Gold Potatoes with Onion
 -Rhubarb Apple Turnovers

Wednesday, April 26**Lunch**

-Salad Niciose w/Fresh Grilled Tuna
 -Chocolate Pecan Tart

[Chez Leon Menu](#)

Call x4598 to make your reservation.

Search**Search the Fermilab Today Archive****Info**

Fermilab Today is online at: <http://www.fnal.gov/today/>

Send comments and suggestions to
today@fnal.gov

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Rights and Diversity at 202-586-2218.

EPP2010 report - April 26

The committee working to form a 15-year plan for US participation in global efforts in particle physics, also known as [EPP2010](#), will issue a final release of its public report on Wednesday, April 26 at the Keck Center of The National Academies in Washington, D.C. Audio webcast will be available [here](#).

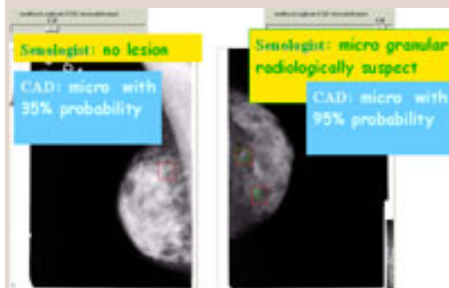
Science Grid This Week**MammoGrid Helps Doctors Detect Breast Cancer**

Illustration of computer-aided detection (CAD) of breast cancer. *Image Courtesy Jose Galvez.*

Breast cancer is the most common cancer in women, and mammograms are one of the main tools doctors use to diagnose this potentially fatal disease. The rate of misdiagnosis from mammography is high, however—estimates range up to 30%—due in part to physical differences across patient populations, differences in mammography equipment and procedures and difficulty in using computers to help detect changes in breast tissue. The MammoGrid project applies grid technology to aid in the accurate detection of breast cancer using mammograms.

[Read More](#)

In the News

the Tevatron in which a pair of lightest supersymmetric particles decays to 4 electrons or muons (leptons).

The CDF search for RPV SUSY counted the number of 3- and 4-lepton events consistent with the decay of two massive supersymmetric particles. Events with 3 leptons were added to increase the discovery potential by finding instances where one lepton escapes detection. The search was tailored for two cases of R-parity violation that could occur. In one case, at least two of the four leptons are electrons, while in the other case, they are muons. Based on the number of 3- and 4-lepton events in the CDF data, no compelling evidence for RPV SUSY was found. The results do not rule out RPV SUSY, but the search does impose restrictions on supersymmetric particle masses.

Previously, the LEP experiments put limits on the mass of the lightest supersymmetric particle in RPV theories. The new CDF results extend well beyond the LEP results and are well complemented by a DZero result as shown in the figure.



Alon Attal (left) and advisor Jay Hauser, both from UCLA, completed this measurement. (Click on image for larger version)

[Result of the Week Archive](#)

Milestones

[Fermilab Result of the Week archive](#)
[Fermilab Safety Tip of the Week archive](#)
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***The Economist*, April 6, 2006: Dark Matter: Accidence and substance, two possible explanations for the bulk of reality**

The unknown pervades the universe. That which people can see, with the aid of various sorts of telescope, accounts for just 4% of the total mass. The rest, however, must exist. Without it, galaxies would not survive and the universe would not be gently expanding, as witnessed by astronomers. What exactly constitutes this dark matter and dark energy remains mysterious, but physicists have recently uncovered some more clues, about the former, at least.

One possible explanation for dark matter is a group of subatomic particles called neutrinos. These objects are so difficult to catch that a screen made of lead a light-year thick would stop only half the neutrinos beamed at it from getting through. Yet neutrinos are thought to be the most abundant particles in the universe.

[Read More](#)



35 Year Service Awards, March 17 luncheon: Row 1 - C. Matthews, S. Orr, L. Trierweiler, J. Garvey, R. Wickenberg, W. Martin. Row 2 - J. Walton, R. Mau, A. Van Ginneken, D. Poll, C. Danner, J. Korienek, R. Yarema, Lab director P. Oddone (Click on image for larger version.)

Announcements

Tritium Web Page Update

In an ongoing effort to keep the public informed about the small amounts of tritium found on site, Fermilab recently added a [Kress Creek results](#) chart to the letters, articles, and other results posted on the [tritium overview page](#). Samples taken from Kress Creek so far have had no detectable levels of tritium.

Retirement Income Options Seminar

On April 21, TIAA-CREF representative John Creel will hold a Retirement Income Options Seminar. According to Employee Benefits Planning Manager Wilma Cardona, the seminar will help you understand the retirement income options that are available and it's a good idea to attend several different sessions to obtain a thorough understanding of this important benefit. You can enroll online [here](#) and review the information about the seminar [here](#).

[Upcoming Activities](#)